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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/535,668	05/19/2005	Hideki Yamane	271810US0PCT	7942

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OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.
1940 DUKE STREET
ALEXANDRIA, VA 22314

EXAMINER	
TESKIN, FRED M	

ART UNIT	PAPER NUMBER
1713	

DATE MAILED: 03/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/535,668	YAMANE, HIDEKI	
	Examiner	Art Unit	
	Fred M. Teskin	1713	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *090605*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Claims 1-4 are currently pending and under examination herein.

The references cited in the Search Report dated 24 February 2002 have been considered; however, none of the cited documents are found to teach or fairly suggest copolymerization of a styrene compound that is "substantially free from a high molecular weight substance," as claimed, and a cyclopentadiene-based compound to produce a petroleum resin. Accordingly, none of the documents are being used in any rejection of the instant claims.

The disclosure is objected to because of the following informalities: at page 4, second full paragraph, "lindene" should read –indene-.

Appropriate correction is required.

Claim 3 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 3 is ambiguous in the recitation "*maximum* molecular weight ... being 1800 *or lower*". The use of "maximum" together with "or lower" creates uncertainty as to the bounds of the claimed range. Clarification and appropriate correction are required.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-4 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over US 2002/0107332 to Klosiewicz et al ("Klosiewicz").

The applicants' invention, as defined in claim 1, is a process for producing a petroleum resin which comprises subjecting a cyclopentadiene based compound and a vinyl-substituted aromaticcompound substantially free from a high molecular weight substance to copolymerization reaction in the presence of a solvent.

Klosiewicz discloses a process for producing hydrocarbon resin by thermally polymerizing a mixture of about 5 to 25 % by weight styrene or aliphatic or aromatic substituted styrene and about 95 to 75 % by weight of a cyclic diolefin component comprising at least about 50 % by weight dicyclopentadiene (DCPD) (paragraph 16).

Klosiewicz does not state that the polymerization is performed using a styrene compound substantially free from a high molecular weight substance.

Nonetheless, Klosiewicz repeatedly stresses the importance of *minimizing* the formation of *high molecular weight* vinyl aromatic polymer during the polymerization

reaction. See paragraphs 17 and 25, where it is stated to be desirable to react substantially all the theoretical amount of vinyl aromatic monomer with cyclopentadiene or diolefins derived from the DCPD feed to minimize the formation of high molecular weight polymer. In paragraph 47, Klosiewicz details a charging procedure and temperature conditions intended to minimize the formation of high molecular weight vinyl aromatic polymer, e.g., polystyrene from styrene monomer, during the batch thermal reaction of his invention.

Thus Klosiewicz can fairly be said to imply the styrene monomer is "substantially free" from this high molecular weight substance when polymerized with a cyclopentadiene-based compound according to the described procedure. And since this same procedure is followed in working examples such as Examples 1A and 1B (paragraphs 51-52), there is a plausible basis for inferring the exemplified process inherently meets the claim requirement of subjecting a cyclopentadiene-based compound (e.g., DCPD) and a vinyl aromatic compound "substantially free from a high molecular weight substance" to copolymerization in the presence of a solvent.

Alternatively, since Klosiewicz teaches which process variables are effective in minimizing the formation of high molecular weight vinyl aromatic polymer, one of ordinary skill undertaking the disclosed process would have been led to optimize these result-effective variables such that the polymerization proceeds with styrene compound being substantially free from this high molecular weight substance. Discovery of an optimum value for a recognized result effective variable in a known process is ordinarily within the skill of the art.

Concerning claims 2-4, note paragraphs 35 and 39, where hydrogenation of the thermally polymerized resin and utility of the hydrogenate as a tackifier in adhesives is taught.

Accordingly, Klosiewicz is considered to fully meet, or in any event, render *prima facie* obvious the subject matter of claims 1-4.

No claims are allowable at this time.

Any inquiry concerning this communication should be directed to Examiner F. M. Teskin whose telephone number is (571) 272-1116. The examiner can normally be reached on Monday through Thursday from 7:00 AM - 4:30 PM, and can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reached on (571) 272-1114. The appropriate fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

FRED TESKIN
PRIMARY EX
1713

FMTeskin/03-08-06